M/021/004

United States Department of the Interior

TAKE PRIDE IN AMERICA

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3809
UT-042

October 12, 1989

Mr. D. Wayne Hedberg
Senior Reclamation Specialist/Hydrologist
Utah Div. of Oil, Gas, & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

538-2401
Paul Carter

RE: Proposal for Closure of Tailings Impoundment, Hecla mIning Company, Escalante Silver Mine, M/021/004, Iron County, Utah

Dear Mr. Hedberg:

At your request we have reviewed Hecla Mining Company's plan for closure of its tailings impoundment facility, located at the Escalante Silver Mine near Enterprise, Utah. Our comments are as follows:

1. At 19 feet per year, it would take three years to totally saturate the tailings impoundment (60 foot depth). Three months of application of solution or "wash" would penetrate less than five feet at 19 feet per year. This represents only eight Percent of the total depth and a little more of the total volume of tailings.

2. "Wash" is not really a wash at all and would serve to leach soluble materials to the five foot depth where they would be concentrated. Only where the under drain is above the five foot depth (along the pond perimeter) would leachate be collected.

3. Depending on how the "wash" is conducted, there could be negative hydrologic effects on the clay liner and dam. Water or solute should not be allowed to pond over the entire impoundment. The dam and liner have never been subjected to full hydraulic conditions i.e. standing water or fully saturated tailings over the entire pond area down to the liner.

4. If "wash" is necessary, maintain current practice of creating and flooding small basins by bull-dozing dikes in the tailings pond to prevent flooding of the entire impoundment area.

5. The current scheme of isolation appears to be feasible. As an alternative to the "wash", consider buffering or neutralizing to the five foot depth using the same strategy as the wash. This would have the advantage of neutralizing the leachate material rather than concentrating it at the five foot depth (three months worth of leaching).

6. Tailings contouring should be kept as level as possible in order to provide for proper runoff, maintain erosion control and provide adequate moisture infiltration into the top soil (a recommended slope is three percent or less).

7. It is desirable that the wasterock fill contains 40 to 50 percent fines and less than 10 percent rock fragments larger than 10 inches. This should allow the fines to fill the pore spaces and also provide some water holding capacity necessary for plant root development.

8. While it is desirable for the topsoil to be more than the proposed four inches, additional areas should not be scalped in order to accomplish this.

9. The rapid development of a permanent vegetative cover over the tailings site is highly desirable. We recommend that a sprinkler system be used to establish the vegetative cover over the tailings site during the growing season. We also recommend that the fence enclosing the tailings site be left in place to preclude grazing impacts, especially during the establishment period.

10. All disturbed BLM lands should be reseeded using the following seed mixture:

SUGGESTED SEED MIXTURE

Species	Pounds Per Acre
Ephraim Crested Wheatgrass	5
Indian Ricegrass	2
Western Wheatgrass	2
Pubescent Wheatgrass	3
Nomad Alfalfa	2
Fourwing saltbrush	1
Total	15

Thanks for allowing us to comment on Hecla Mining Company's plan of closure. If you have any questions regarding our review, please contact Paul Carter in the Cedar City District Office.

Sincerely,

David L. Evans

District Manager
Acting

cc: Beaver River Resource Area